Service Manual

753 Wide Cut Mower

NOTE: These materials are for use by trained technicians experienced in the service and repair of outdoor power equipment of the kind described in this publication, and are not intended for use by untrained or inexperienced individuals. These materials are intended to provide supplemental information to assist the trained technician. Untrained or inexperienced individuals should seek the assistance of an experienced and trained professional. Read, understand, and follow all instructions and use common sense when working on power equipment. This includes the contents of the product's Operators Manual, supplied with the equipment. No liability can be accepted for any inaccuracies or omission in this publication, although care has been taken to make it as complete and accurate as possible at the time of publication. However, due to the variety of outdoor power equipment and continuing product changes that occur over time, updates will be made to these instructions from time to time. Therefore, it may be necessary to obtain the latest materials before servicing or repairing a product. The company reserves the right to make changes at any time to this publication without prior notice and without incurring an obligation to make such changes to previously published versions. Instructions, photographs and illustrations used in this publication are for reference use only and may not depict actual model and component parts. © Copyright 2005 MTD Products Inc. All Rights Reserved

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Servicing the Troy-Bilt Wide Cut 33” Combination Mower

Includes update Information for older models

TROY-BILT WIDE CUT MOWER

Model 12A-E753B063 (NEW)

- 9 hp briggs & Stratton I/C OHV engine
- Electric Start
- 33” Deck
- Self-Propelled Multiple Speed Gear Drive
- Peerless Transaxle
- BLade Brake Clutch
- Automatic Parking Brake
- Single Lever Height Adjustment
- 3-in-1 Capacity

The Model E753B features a standard size battery and electric start. See Figure 1.

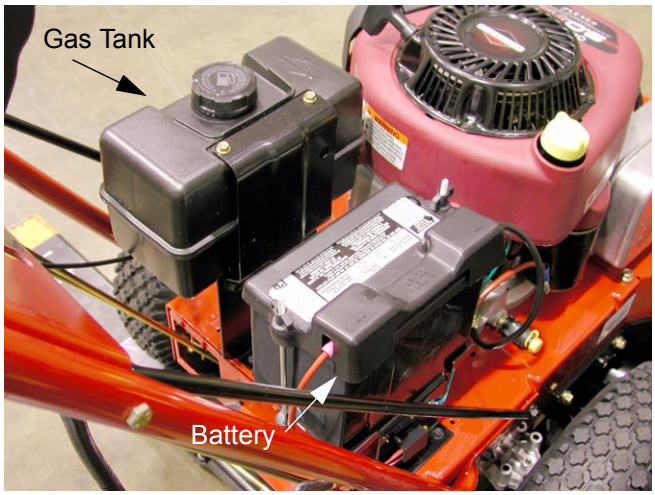

Figure 1

The key switch is located on the right side of the console. See Figure 2.

Figure 2

The unit also features an oversize fuel tank with a manual shutoff valve. See Figure 3.

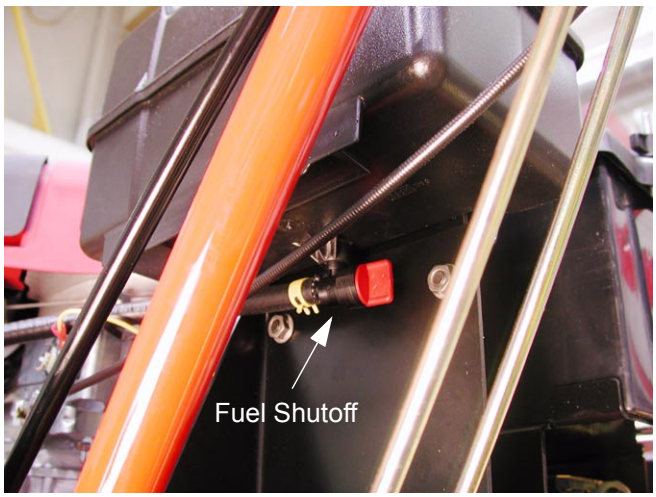

Figure 3

The fuse is located on the right side next to the battery and the solenoid is mounted on the battery support bracket under the battery. See Figure 4.

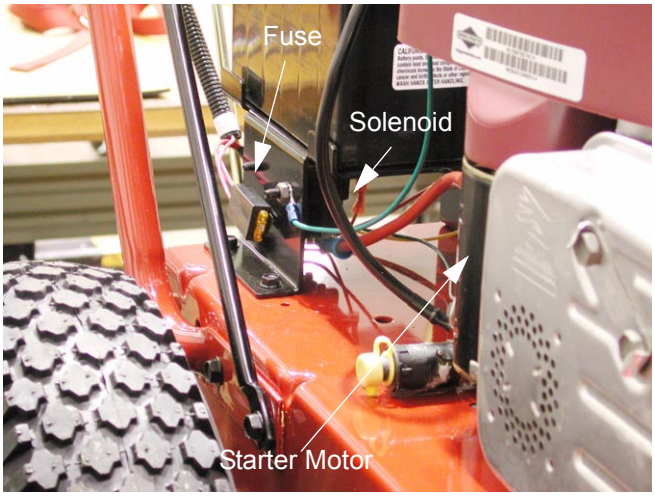

Figure 4

Most electrical problems can be diagnosed using a ohm meter and checking continuity of the ignition switch and wires to each component. See Figure 5.

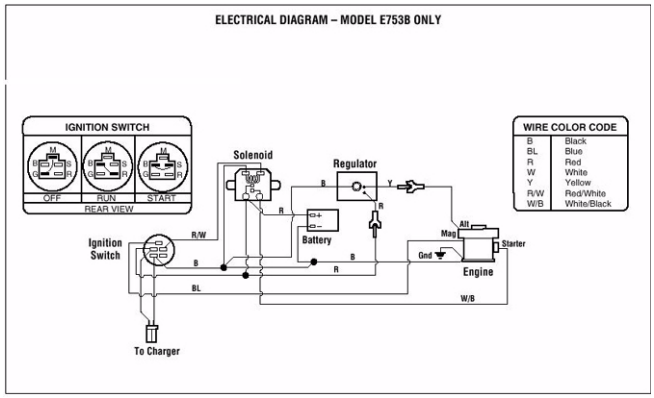

Figure 5

NOTE: The Operator’s Manual that comes with the unit has a wealth of information regarding the setup, operation and servicing of this unit.

NOTE: This Service Manual is a supplement to the Operator’s Manual.

IMPORTANT: Please read, understand and follow all safety procedures listed in the Operator’s Manual when working on this unit.

CAUTION: Before servicing the unit place it on a level surface, turn off the engine and let the unit cool, and disconnect the spark plug wire. On electric start units, make sure the key is in the “off” position.

1. BLADE DRIVE BELT REMOVAL

1.1. Make sure the blade drive control is disengaged.

1.2. Using a ½ inch socket remove the four screws securing the belt cover and removed the cover. See Figure 6.

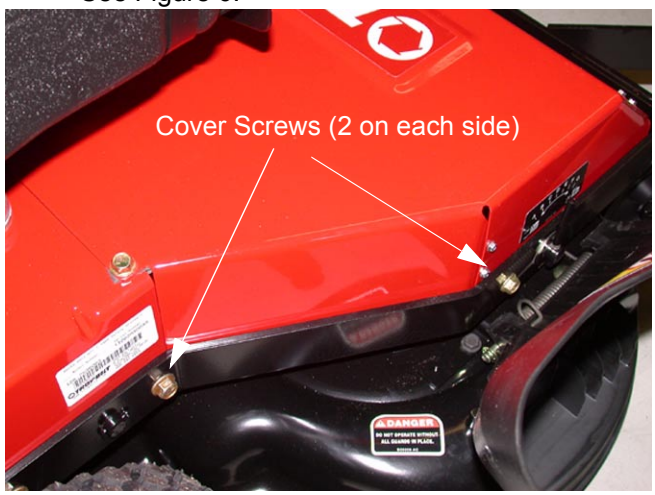

Figure 6

1.3. Using a ½ inch socket, remove the two screws attaching the flap bracket to the frame. Remove the flap bracket. See Figure 7.

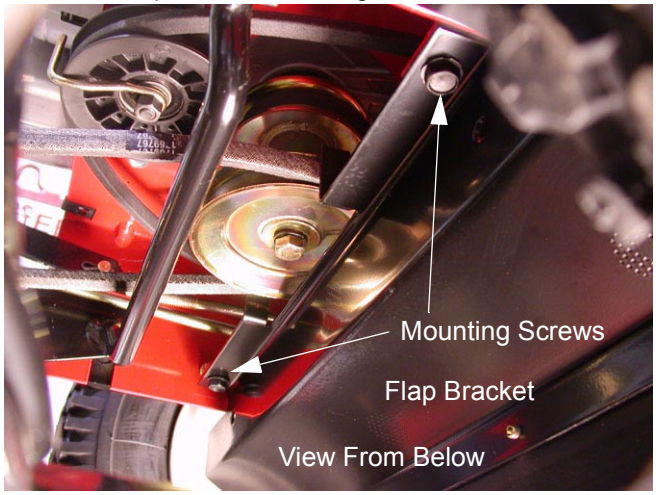

Figure 7

1.4. Using a 9/16 inch socket and opened end wrench, remove the front idler pulley to allow the belt to be removed from around the pulley. See Figure 8.

Figure 8

NOTE: Maintain correct order of parts.

1.5. Using a 9/16 inch socket and opened end wrench, remove the rear idler pulley to allow the belt to be removed from around the pulley. See Figure 8.

NOTE: Maintain correct order of parts. The pulley mounts to the front hole in the idler arm.

1.6. Drop the belt off the engine pulley.

1.7. Replace the belt and assemble in the reverse order.

NOTE: Maintain orientation of belt guides during reassembly. See Figure 8.

2. DECK IDLER PULLEY INSPECTION

2.1. Using a 9/16 inch socket and opened end wrench, remove the front and rear deck idler pulleys and inspect for wear.

NOTE: There is a pyramid washer under the front mounting bracket that helps maintain the position of the front idler pulley. See Figure 9.

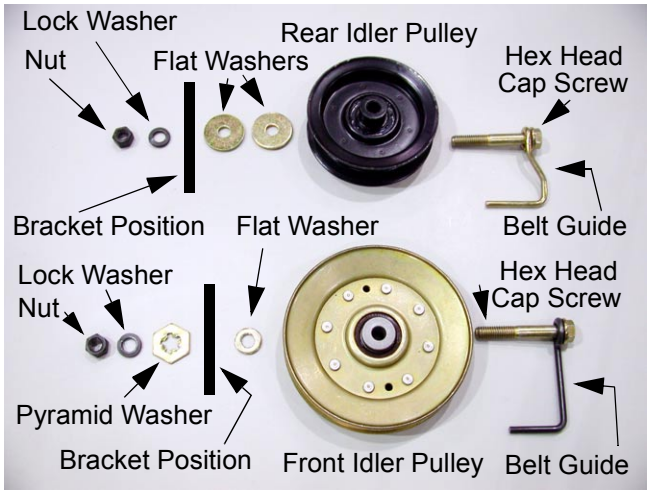

Figure 9

3. BLADE DRIVE BELT ADJUSTMENT

3.1. Using a ½ inch socket remove the four screws securing the belt cover and remove the cover.

3.2. With mower on level ground, adjust the blade cutting height to about 3”.

3.3. With the blade drive control disengaged, set a gap of 1/8” between the spring and the flat washer on the end of the threaded portion of the lift crank by adjusting the nut. See Figure 10.

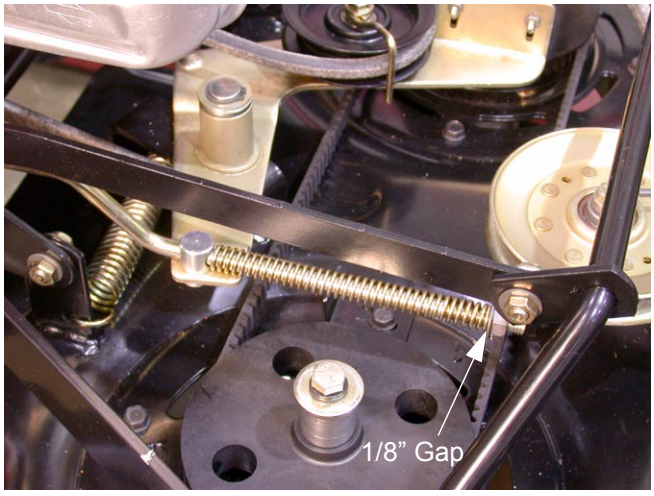

Figure 10

3.4. With the engine OFF have a helper engage the blade drive. Measure the distance between the center of the idler pulley and the left drive pulley. The measurement should be between 5 1/2” and 5 5/8”. See Figure 11.

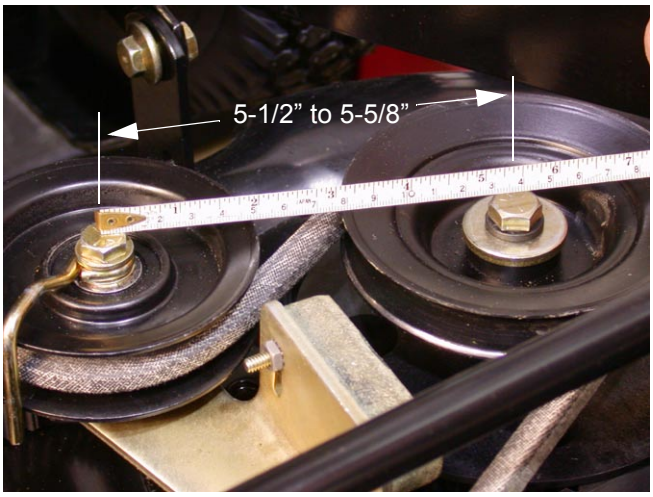

Figure 11

NOTE: If the blade drive belt slips during operation it may be necessary to slide the idler pulley forward in the slot on the idler arm. Loosen the hardware on the idler pulley and slide the pulley forward slightly. Tighten the hardware. See Figure 8.

IMPORTANT: The blades must come to a complete stop when the blade engagement lever is released.

4. BLADE DRIVE CONTROL LEVER ADJUSTMENT

NOTE: Make the following adjustment if the blade drive control lever releases during operation.

4.1. With the engine off, engage the operator presence control and the blade drive control. See Figure 12.

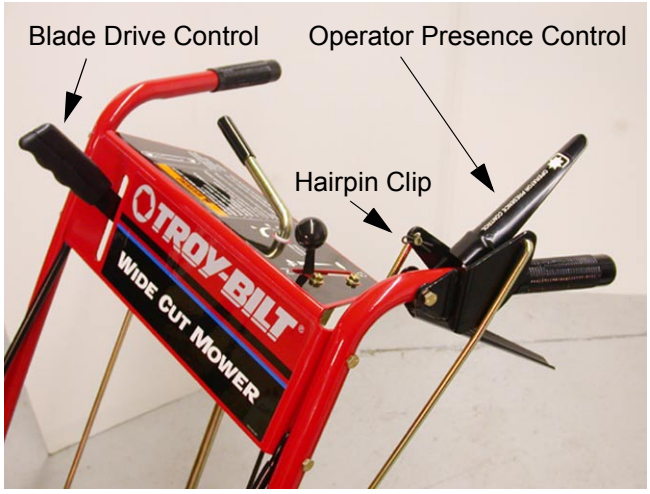

Figure 12

4.2. Without releasing the controls, look inside the cutout at the left rear of the frame and make sure that the operators presence control latches are fully engaged. See Figure 13.

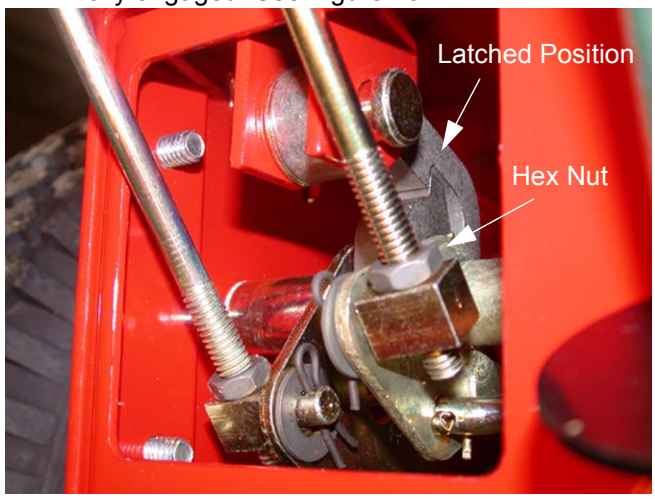

Figure 13

4.3. To adjust, remove the hairpin clip on the upper end of the operator presence control arm.

4.4. Loosen the hex nut and shorten the rod by one or two turns. (Do not over adjust.) Tighten the hex nut securely. See Figure 13.

4.5. If properly adjusted, the blade drive control will disengage when the operators presence control is released.

5. BLADE SPINDLE BELT REPLACEMENT

5.1. Using a ½ inch socket remove the four screws securing the belt cover and removed the cover.

5.2. Using a ½ inch socket loosen the screw securing the belt tension adjustment bracket and turn it out of the way. See Figure 14.

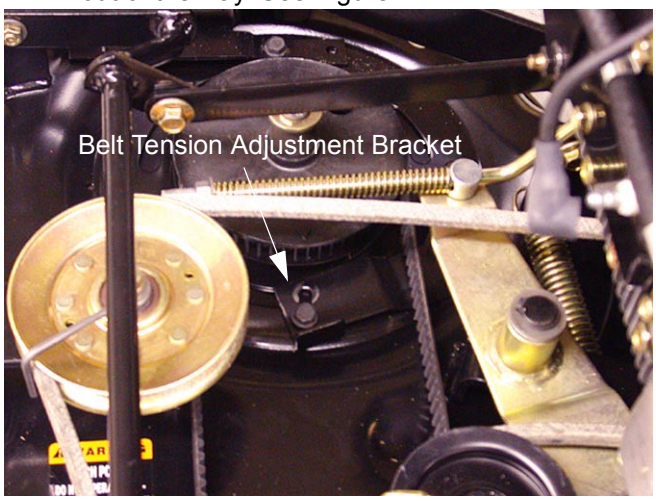

Figure 14

5.3. Align the sight holes in the right pulley with the spindle housing mounting bolts. See Figure 15.

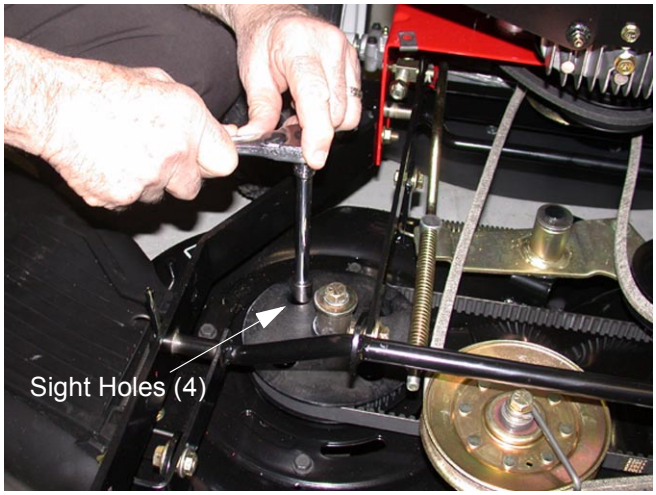

Figure 15

5.4. Using a ½ inch deep socket loosen the four mounting bolts securing the spindle housing to the deck. See Figure 15.

5.5. Slide the pulley assembly to the left to loosen tension on the cogged belt.

5.6. Remove the cogged belt from around the right cogged pulley.

5.7. Temporarily remove the blade drive belt from around the left blade drive pulley. See Figure 16.

Figure 16

5.8. While holding the Idler arm and brake away from the left blade drive pulley, remove the toothed belt from around the left cogged pulley and up and over the drive pulley. See Figure 17.

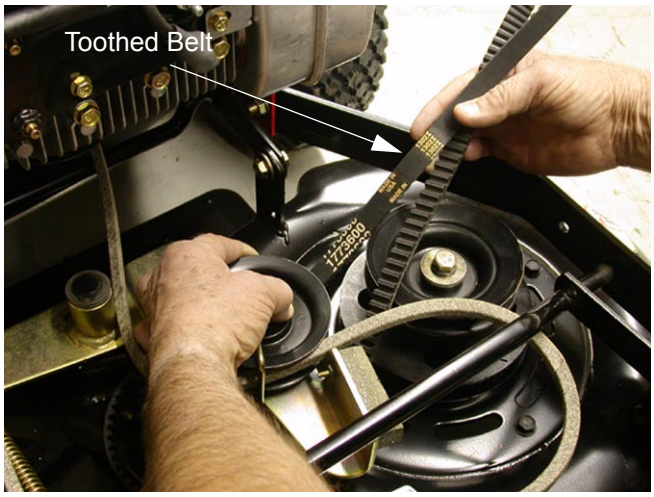

Figure 17

5.9. Replace the belt with a new belt.

IMPORTANT: Time the blades properly during reassembly. Set the cutting blades perpendicular to each other during installation of the toothed drive belt.There are arrows cast into the cogged pulleys to help align the blades. Offset these arrows by 90 degrees. See Figure 18.

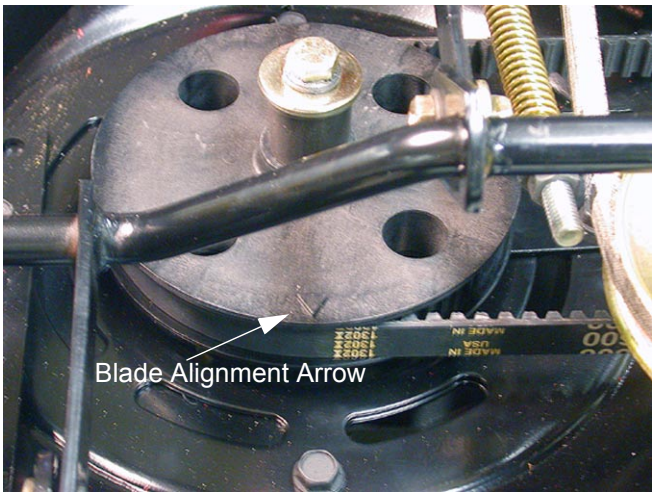

Figure 18

NOTE: The arrows do not indicate the blade position. Blades are 90 degrees offset from the arrow position.

5.10. Rotate the tension adjustment bracket into position and apply tension to the spindle housing and cogged belt.

5.11. Tighten the adjustment bracket screw.

5.12. Tighten the four spindle mounting bolts to 15 ft. lbs.

NOTE: Proper belt tension is achieved when the belt deflects approximately 1/2 inch at the midpoint between the pulleys when applying moderate finger pressure.

5.13. Reinstall the blade drive belt over the left drive spindle.

5.14. Install the belt cover.

6. BLADE BRAKE REPLACEMENT

6.1. Using a ½ inch socket remove the four screws securing the belt cover and removed the cover.

6.2. Secure the operator presence control lever to the left handlebar using a plastic tie or tape. See Figure 19.

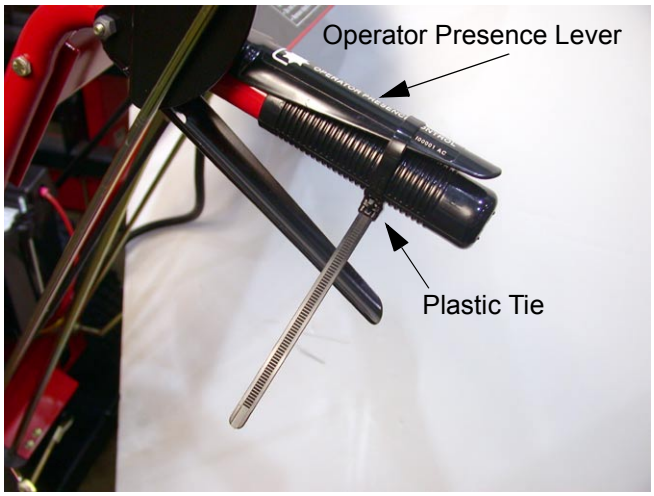

Figure 19

6.3. Engage the blade control lever to move the brake pad away from the drive pulley. See Figure 20.

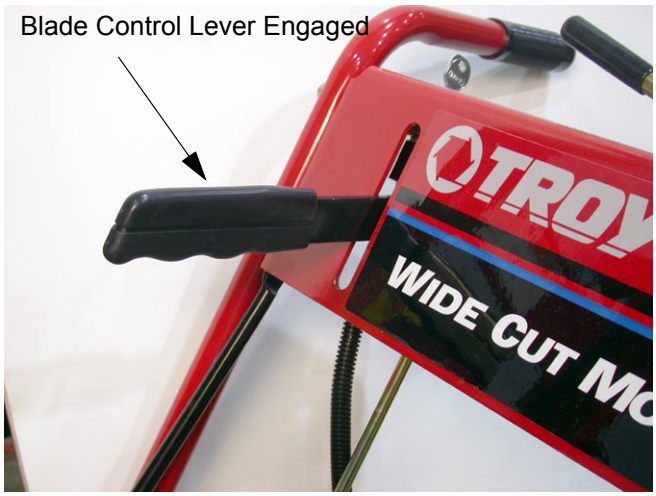

Figure 20

6.4. Using a socket remove the Sems nuts and flat head screws securing the brake pad to the idler arm and remove the old brake pad. See Figure 21.

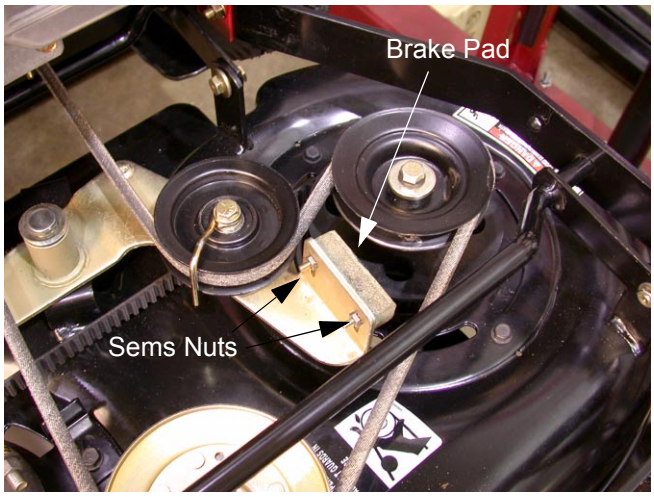

Figure 21

6.5. Loosely install the new brake pad.

6.6. Release the operator presence control and allow the new brake pad to engage the sheave of the idler pulley. See Figure 22.

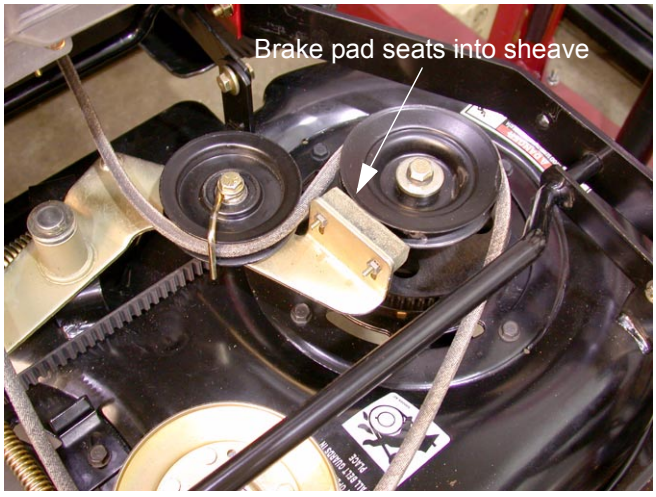

Figure 22

6.7. Tighten the Sems nut to secure the brake pad to the idler arm.

7. WHEEL DRIVE BELT REMOVAL AND REPLACEMENT.

NOTE: Some older units may not have all the belt guides installed.

7.1. Release all mower controls.

7.2. Using a ½ inch socket, remove the two screws attaching the flap bracket to the frame. Remove the flap bracket. See Figure 23.

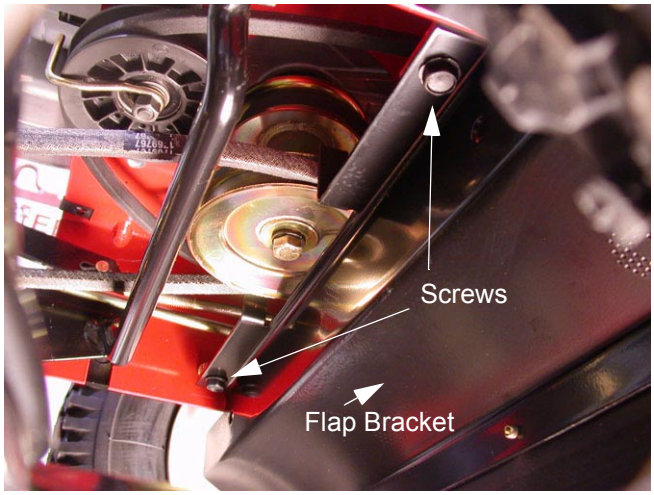

Figure 23

7.3. Using a ½ inch socket remove the four screws securing the belt cover and remove the cover.

7.4. Temporarily remove the blade drive belt from around the engine pulley.

7.5. Use a 9/16 inch socket to loosen the locknut securing the pulley and belt guide to the front idler bracket. Remove the belt guide and pulley. See Figure 24.

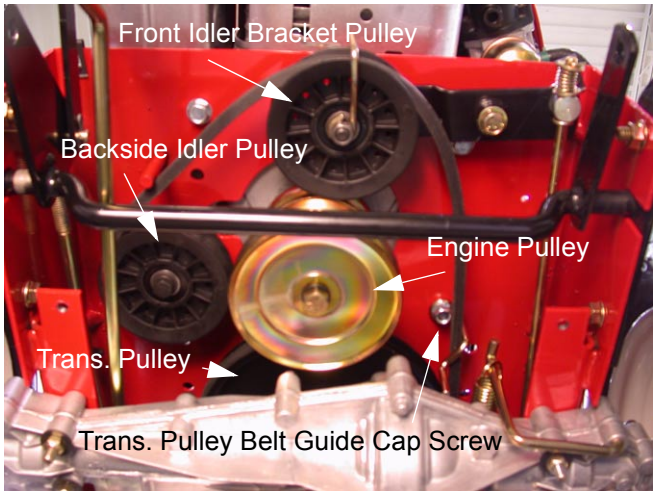

Figure 24

NOTE: Maintain correct order of parts:

- Pulley
- Washer
- Belt Guide
- Nut

7.6. Use a 9/16 inch socket to loosen the cap screw securing the transmission pulley belt guide to the frame and engine mount. Pivot the belt guide away from the pulley. See Figure 24.

7.7. Using a 1/2 inch socket, loosen the nut securing the rear belt support bracket to the transmission. Pivot the belt support away from the belt. See Figure 25.

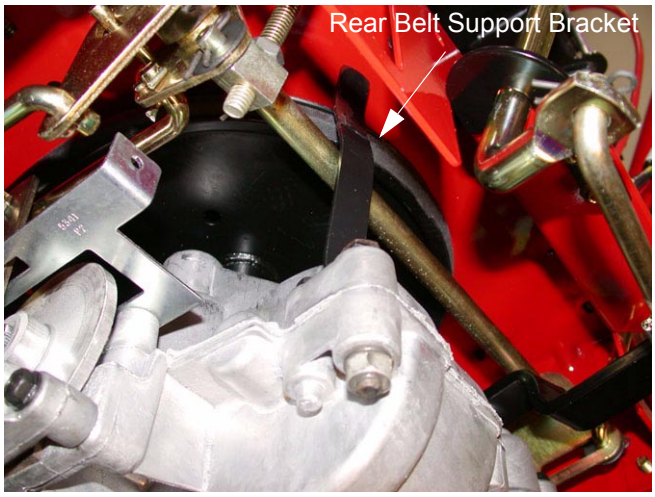

Figure 25

7.8. Remove the wheel drive belt from the engine sheave, backside idler and the transmission pulley. See Figure 26.

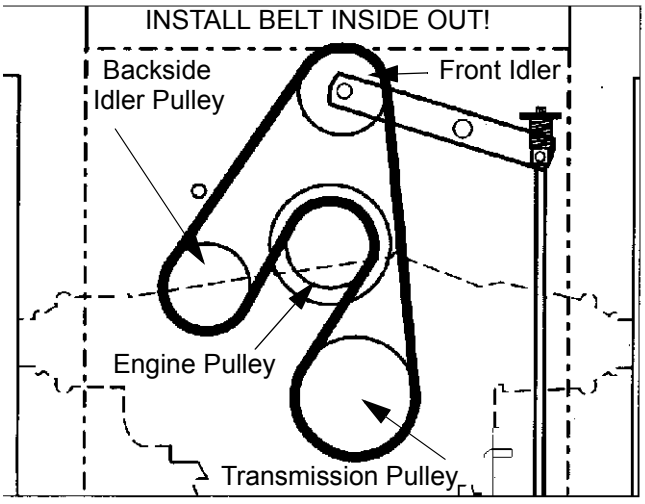

Figure 26

7.9. Install a new belt in the reverse order.

NOTE: The new belt must be installed inside out. The “V” side of the belt lies against the engine sheave only. The flat side of the belt lies against the transmission pulley and idler pulleys.

8. WHEEL DRIVE BELT ADJUSTMENT

The wheel drive belt requires adjustment when belt slippage occurs. This is most noticeable when more traction is needed (such as going up slopes).

8.1. Remove the hair pin clip from the upper end of the wheel drive control rod. Slide the rod out of the lever assembly. See Figure 27.

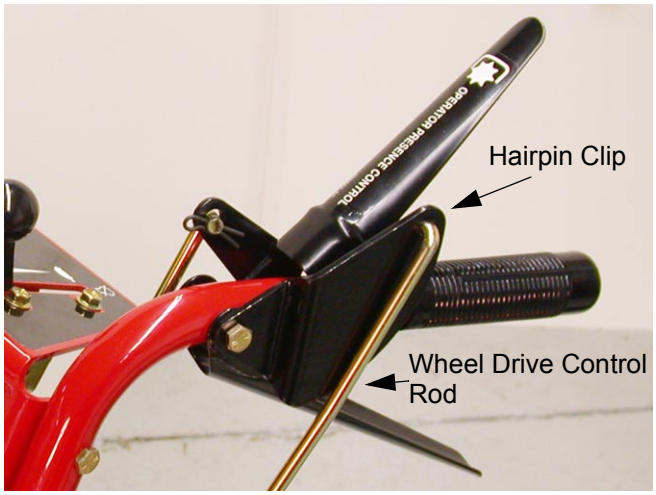

Figure 27

8.2. Using a 9/16” opened end wrench, loosen the jam nut on the lower end of the rod. See Figure 28.

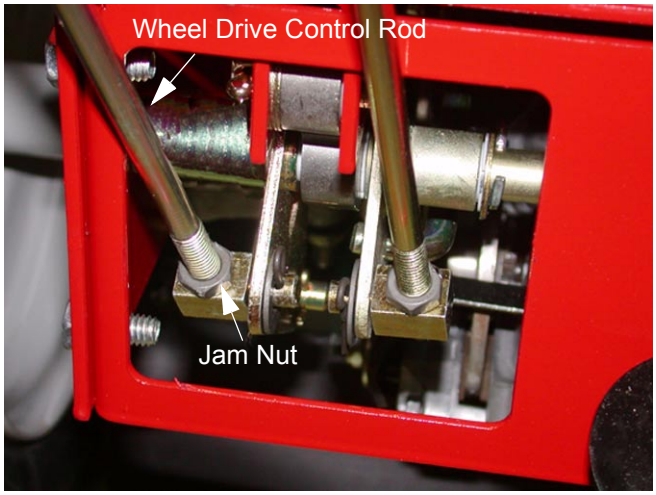

Figure 28

8.3. Thread the rod one or two turns clockwise for more tension.

8.4. Insert the rod back into the hole in the wheel drive control lever and install the hairpin clip.

8.5. Test the operation of the unit. Repeat the adjustment if necessary.

NOTE: Most comfortable operation will be obtained when the adjustment allows the lever to just make contact with the hand grip when sufficient traction is achieved.

8.6. When adjusted properly, tighten the lower jam nut against the block.

9. WHEEL BRAKE ADJUSTMENT

This adjustment may be required it the unit does not hold on a hill with the operator presence control disengaged, or if the brake drags with the operator presence control engaged and the transmission is in neutral. (The unit should roll freely in this position.)

NOTE: With the operator presence control released there should be a 3/8” to 5/16” gap between the back of the brake arm and the bracket. See Figure 29.

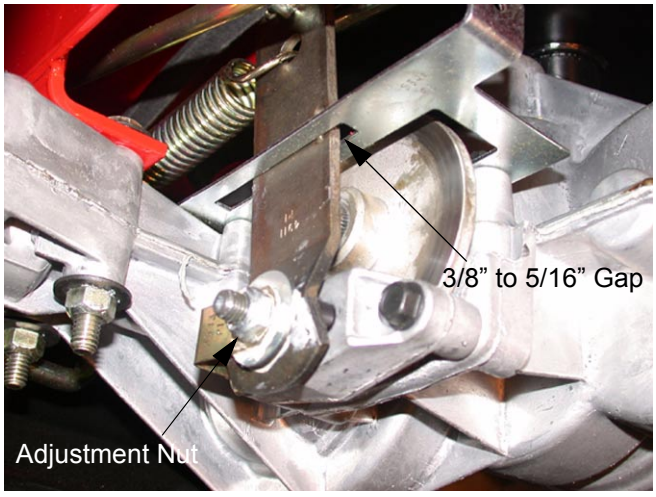

Figure 29

9.1. To adjust use a 1/2” wrench to make a small (1/4 turn) adjustment to the brake locknut until the correct measurement is achieved. It may be necessary to relieve spring tension when decreasing distance. Have an assistant engage the operator presence control while you adjust the nut. See Figure 30.

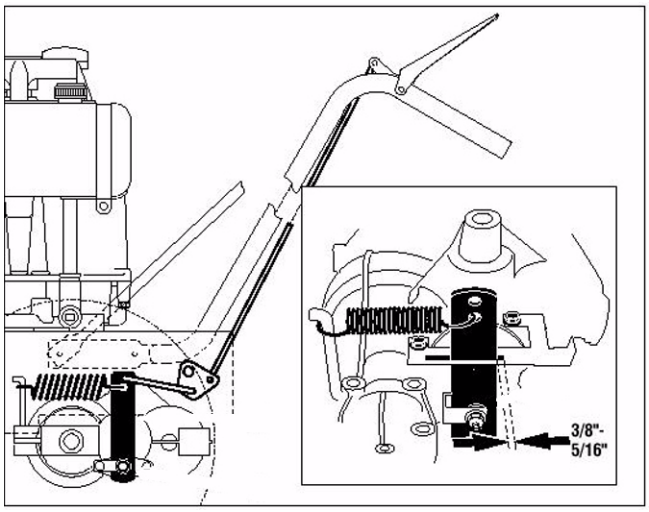

Figure 30

10. TRANSMISSION NEUTRAL ADJUSTMENT

With the unit turned off and the shift lever in the neutral detent position you should be able to hold down the operator presence control and roll the unit easily forward and back. Check this from forward and reverse positions. If the unit is in gear you will need to perform a neutral adjustment.

10.1. Place the shift lever in the neutral detent position of the console. See Figure 31.

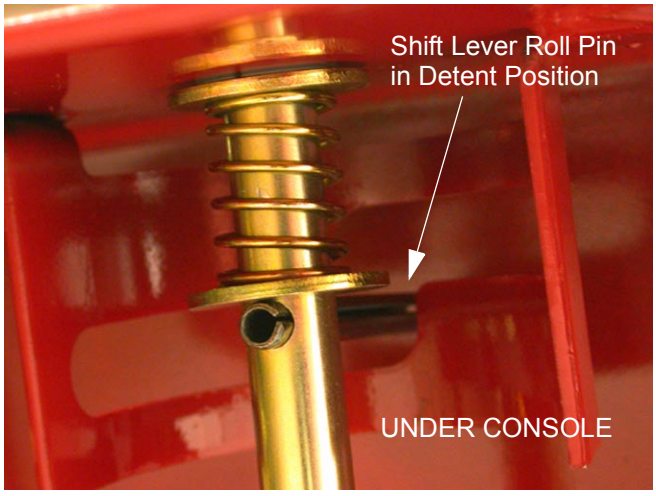

Figure 31

10.2. Remove the hairpin clip securing the shift link and lower it from the shift rod. See Figure 32.

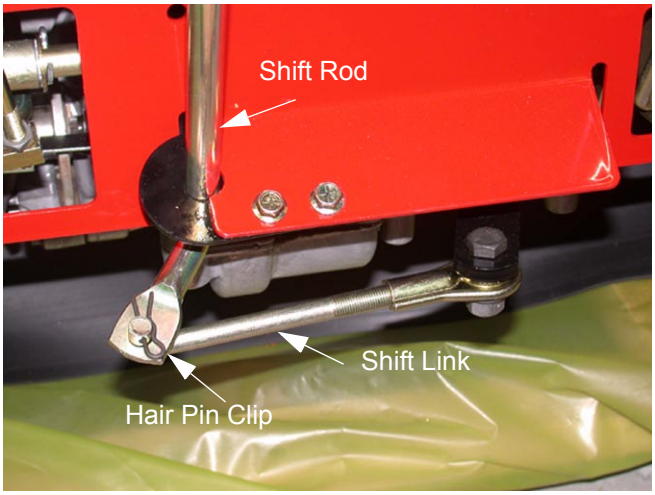

Figure 32

10.3. Moved the shift arm back and forth as necessary into each detent until the transmission is in neutral.

NOTE: Moving the shift arm clockwise all the way to the left, and then one notch counterclockwise should put the transmission in neutral. With the operator presence control lever down you should be able to easily roll the unit.

10.4. With the transmission in neutral, rotate the shift link until the hooked end easily fits into the hole at the bottom end of the shift rod. See Figure 32.

NOTE: The shift rod must be held in the neutral position while the shift link is adjusted.

10.5. Secure the shift link into the shift rod with the hairpin clip removed earlier.

10.6. Recheck the neutral position and readjust if necessary. Check from both the forward and reverse direction.

11. DECK REMOVAL

11.1. Using a ½ inch socket remove the four screws securing the belt cover and remove the cover.

11.2. Remove the blade drive belt (see blade drive belt removal section)

11.3. Using a recoil rope or spring removal tool, remove the extension spring attached to the deck bracket and idler arm. See Figure 33.

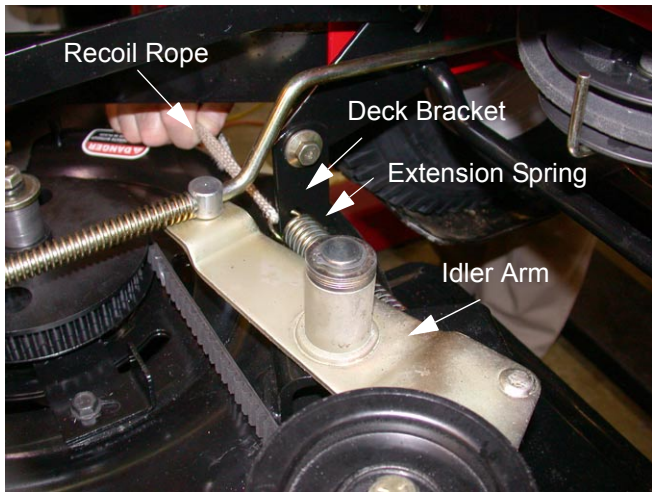

Figure 33

11.4. Remove the spring from the idler arm.

11.5. Using a medium size 45 degree retaining ring tool, remove the retaining ring securing the idler arm to the deck bracket. See Figure 34.

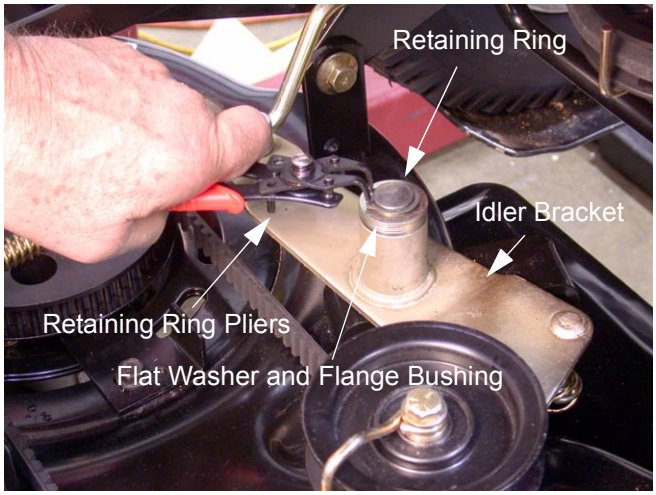

Figure 34

11.6. Remove the flat washers. There may be as few as 2 and as many as 4 washers. and flange bushing from the idler arm. Inspect the flange bushing for wear.

11.7. Remove the idler arm from the deck bracket and set it on the mower support.

11.8. Support the deck from below.

11.9. Using a 9/16 inch socket and open end wrench, remove the four shoulder bolts, flat washers and flange locknuts securing the deck to the lift assemblies. See Figure 35.

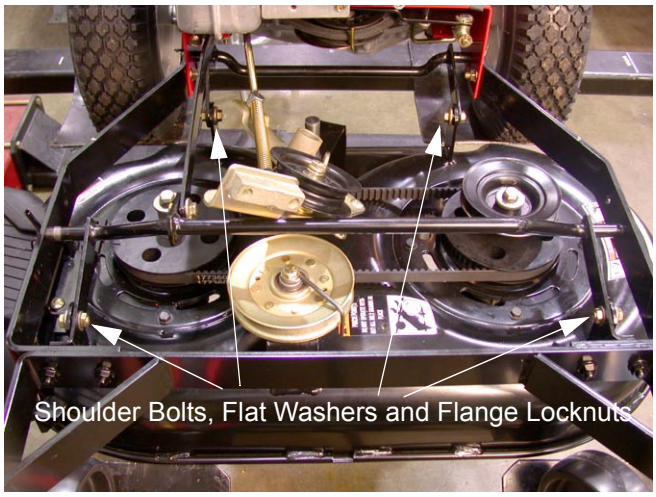

Figure 35

NOTE: Maintain the proper orientation of the shoulder bolts during reassembly.

11.10. Remove the deck from under the unit.

12. RIGHT SPINDLE REMOVAL

12.1. Using a ½ inch socket remove the four screws securing the belt cover and remove the cover.

12.2. Using a ½ inch socket loosen the screw securing the belt tension adjustment bracket and turn it out of the way. See Figure 36.

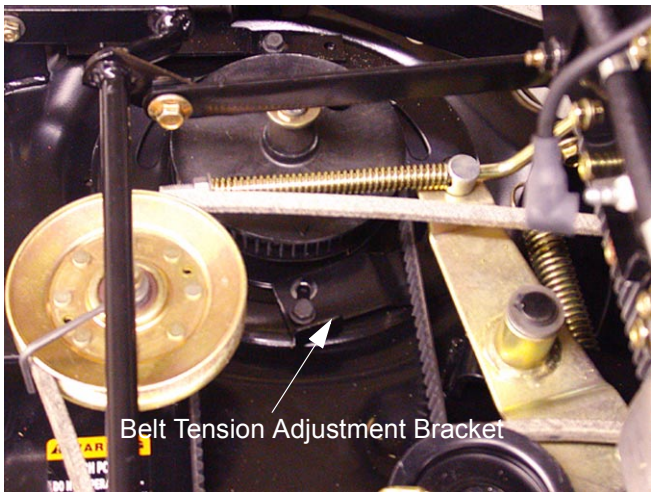

Figure 36

12.3. Align the sight holes in the right pulley with the spindle housing deck mounting bolts. See Figure 37.

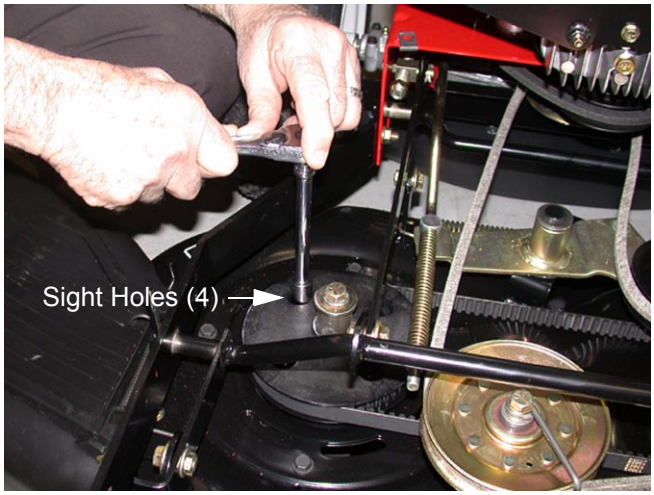

Figure 37

12.4. Using a ½ inch deep socket loosen the four mounting bolts securing the right spindle housing to the deck. See Figure 37.

12.5. Using a shop rag to protect your hand, hold the blade secure while removing the flange lock screw that secures the spindle shaft with an air gun and 5/8 inch socket. See Figure 38.

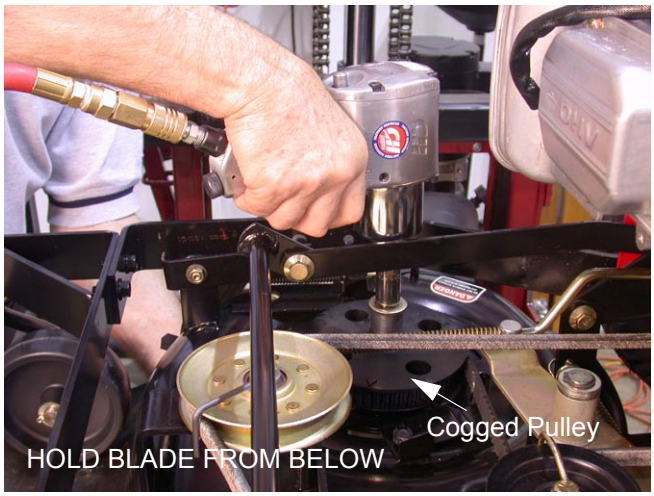

Figure 38

12.6. Remove the cutting blade and spindle shaft from the spindle housing.

12.7. Remove the cogged pulley, spacer, washer, lock washer and screw from the spindle housing.

Components on bench. See Figure 39.

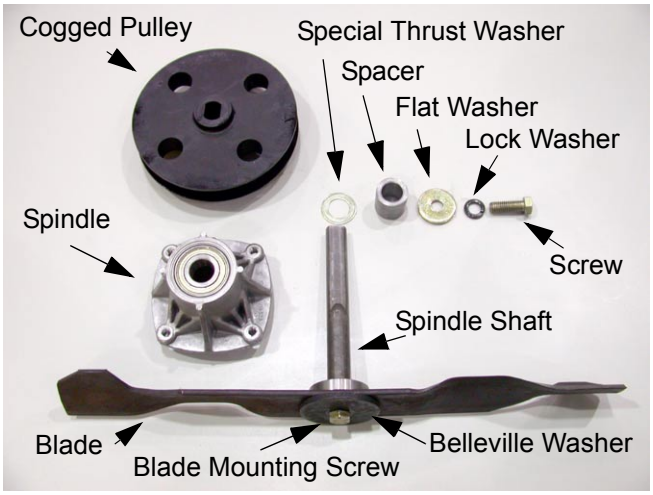

Figure 39

12.8. Using a ½ inch socket remove the four mounting bolts securing the spindle to the deck. See Figure 40.

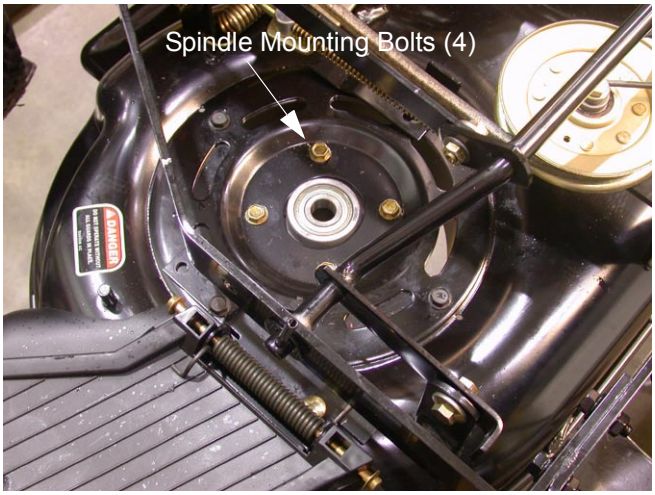

Figure 40

NOTE: Hold the housing from underneath the deck when removing the final mounting bolt. Remove the housing from the deck.

12.9. Inspect the housing for excessive wear or damage and replace as needed. See Figure 39.

12.10. Assembly is the reverse order of disassembly.

IMPORTANT: During reassembly place Locktite 242 on the threads of the spindle pulley mounting bolts and torque to 35 ft. lbs. If blades are removed also torque the blade mounting screws to 35 ft. lbs.

NOTE: Time the blades properly during reassembly. Set the cutting blades perpendicular to each other during installation of the toothed drive belt. See Figure 41.

Figure 41

13. LEFT SPINDLE REMOVAL

13.1. Using a ½ inch socket remove the four screws securing the belt cover and removed the cover.

13.2. Using a ½ inch socket loosen the screw securing the belt tension adjustment bracket and turn it out of the way. See Figure 42.

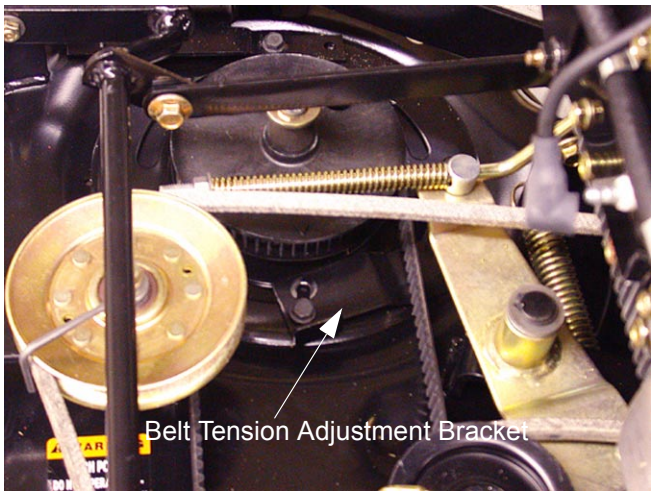

Figure 42

13.3. Align the sight holes in the right pulley with the spindle housing deck mounting bolts. See Figure 43.

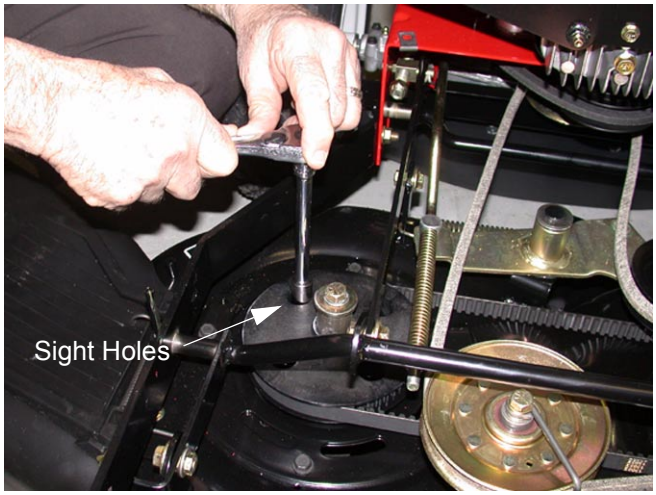

Figure 43

13.4. Using a ½ inch deep socket loosen the four mounting bolts securing the spindle housing to the deck. See Figure 43.

13.5. Slide the pulley assembly to the left to loosen tension on the cogged belt.

13.6. Remove the deck drive belt from around the left spindle pulley. See Figure 44.

Figure 44

13.7. Secure the operator presence control lever to the left handlebar using a plastic tie or tape. See Figure 45.

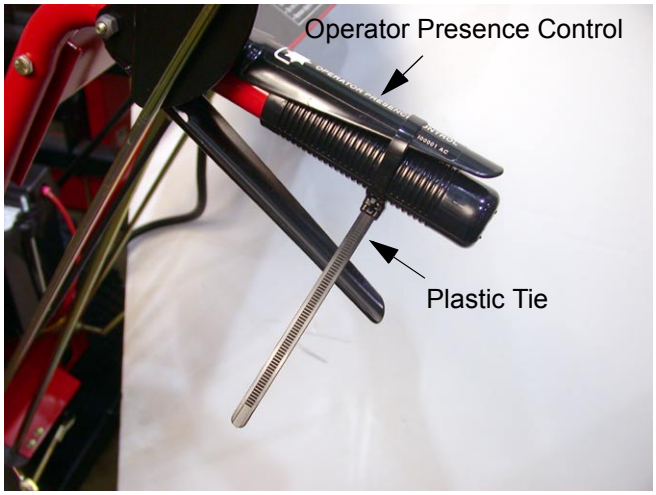

Figure 45

13.8. Engage the blade control lever to move the brake pad away from the drive pulley. See Figure 46.

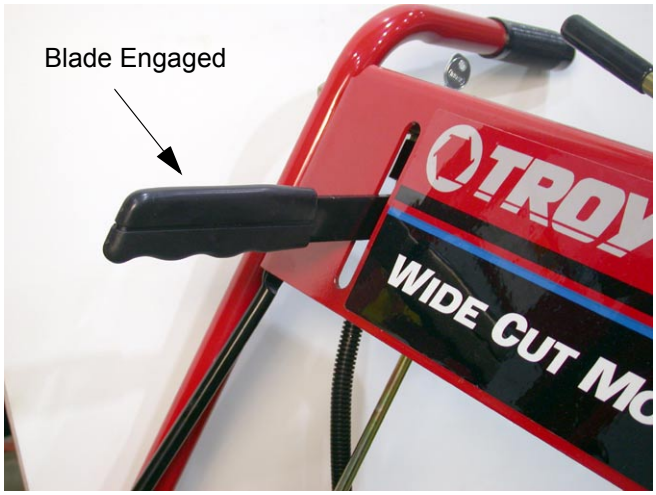

Figure 46

13.9. Using a shop rag to protect your hand, hold the blade secure while removing the flange lock screw that secures the left spindle shaft with an air gun and 5/8 inch socket. See Figure 47.

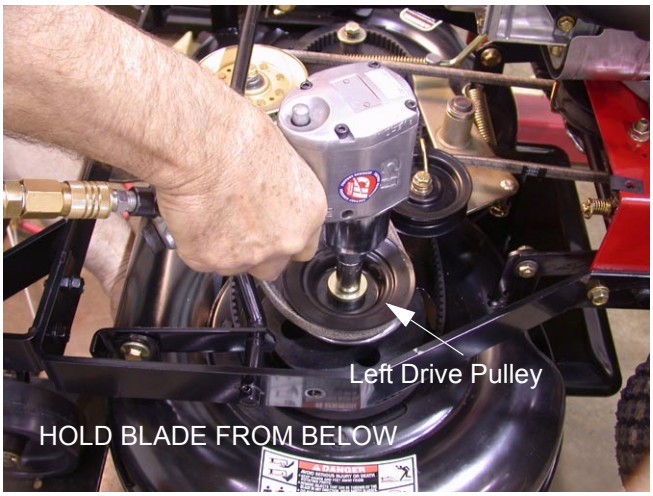

Figure 47

13.10. Remove the cutting blade and spindle shaft from the left spindle housing.

NOTE: There will be a lock washer and flat washer securing the drive pulley to the blade spindle.

13.11. Remove the drive pulley from the top of the cogged pulley.

NOTE: There will be a spacer between the drive pulley and the cogged pulley assembly. See Figure 48.

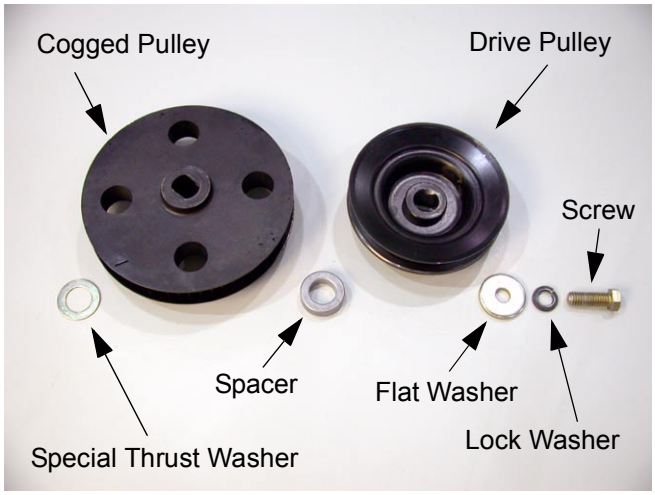

Figure 48

13.12. Removed the cogged pulley assembly and special thrust washer from the top of the Spindle assembly.

13.13. Using a ½ inch socket, loosen the four mounting bolts securing the spindle housing to the deck. See Figure 49.

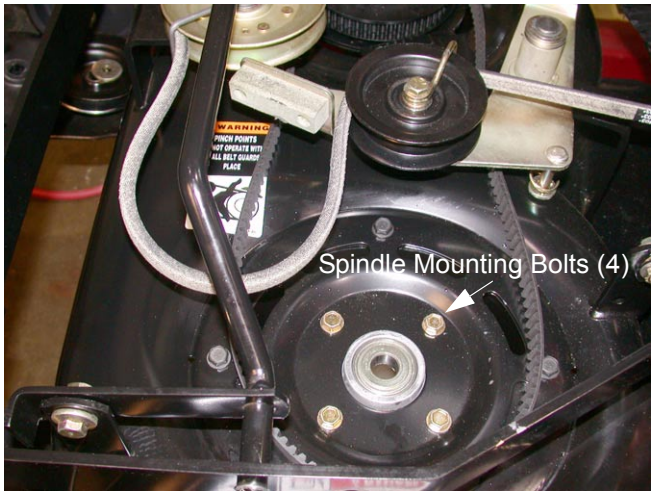

Figure 49

NOTE: Hold the housing from underneath the deck when removing the final mounting bolt. Remove the housing from the deck.

13.14. Inspect the housing for excessive wear or damage and replace as needed.

13.15. Assembly is the reverse order of disassembly.

IMPORTANT: Torque the spindle housing flange lock screws to 15 foot pounds during reassembly.

IMPORTANT: During assembly, place Locktite 242 on the threads of the spindle shaft screw and torque to 35 ft. lbs.

IMPORTANT: Time the blades properly during reassembly. Set the cutting blades perpendicular to each other during installation of the toothed drive belt. Torque the blade mounting screw to 35 ft. lbs.

14. TRANSMISSION REMOVAL

14.1. Remove the blade drive belt (see the Blade Drive Belt Removal section)

14.2. Remove the wheel drive belt (see the Wheel Drive Belt Removal section)

NOTE: While it may be possible to remove the transmission while the deck is installed, it would be easier to first remove the deck.

14.3. Support the frame off the ground in a way that allows you to work on the transmission from

underneath the unit. You will also be removing the wheels and transmission from this position.

14.4. Using a ½ inch socket, remove the two screws attaching the flap bracket to the frame. Remove the flap bracket. See Figure 50.

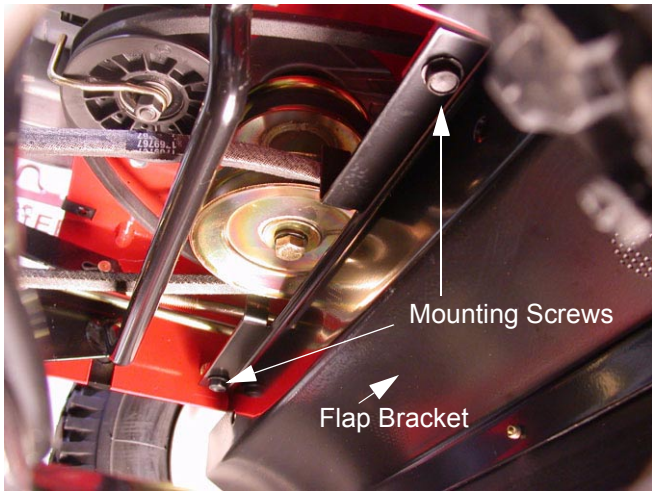

Figure 50

14.5. Using a pair of needle nosed pliers, remove the left rear cotter pin securing the lower brake rod to the brake arm. See Figure 51.

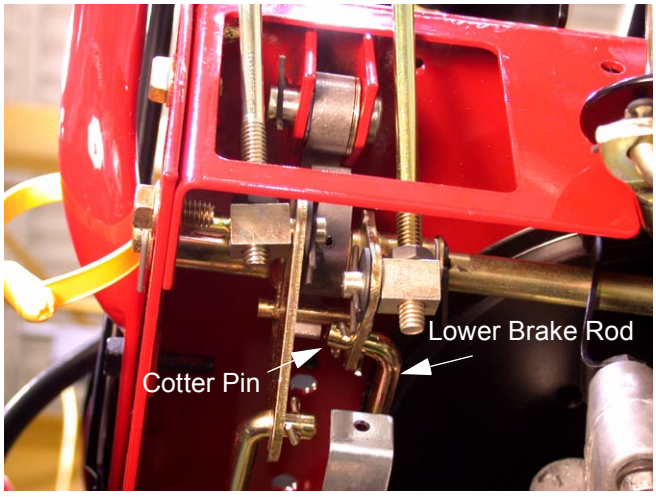

Figure 51

14.6. Remove the lower brake rod from the brake arm.

14.7. Using a pair of needle nosed pliers remove the hair pin securing the shift link rod to the shift rod. See Figure 52.

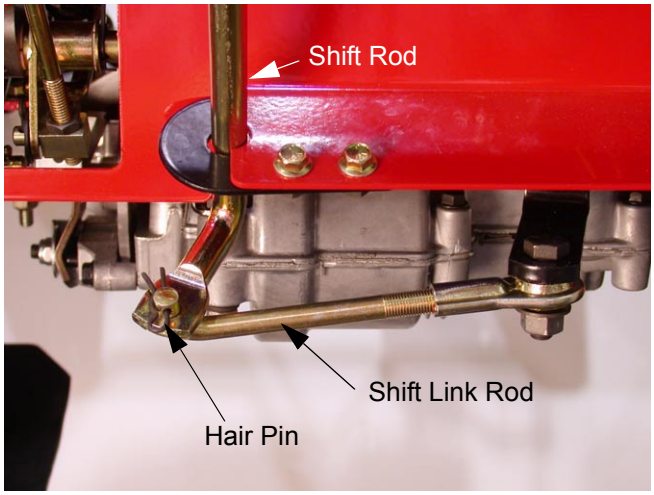

Figure 52

14.8. Remove the tang retaining ring securing one of the wheels. See Figure 53.

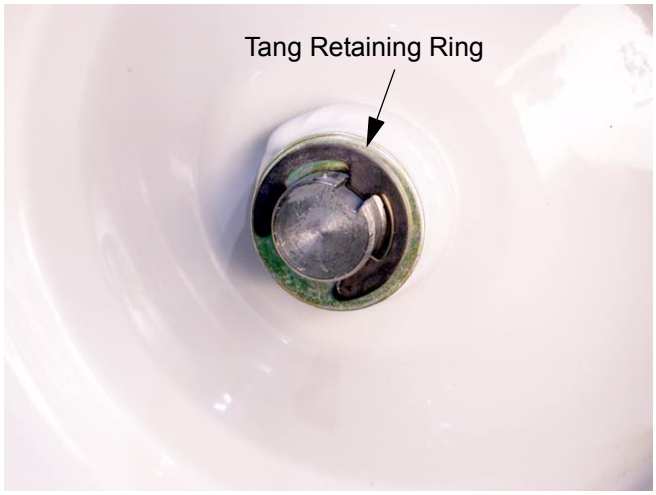

Figure 53

14.9. Remove the special washers and the wheel.

NOTE: Additional wheel spacing washers can be added when required.

14.10. Remove the square key from the axle. See Figure 54.

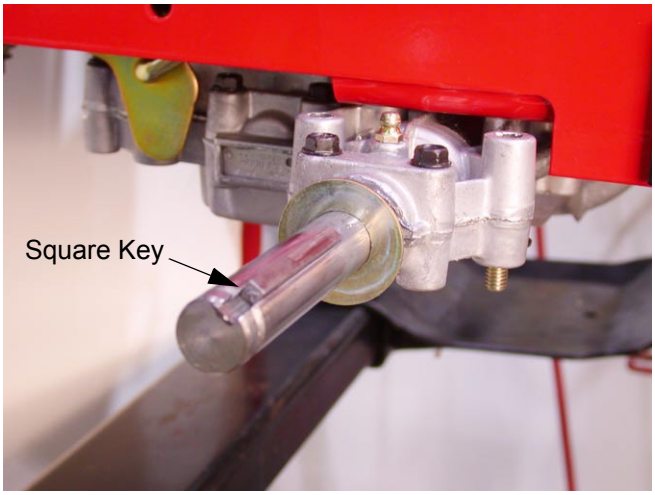

Figure 54

14.11. Repeat for the other wheel.

14.12. Using a ½ inch socket and opened end wrench remove the top locknuts, flat washers and screws securing the transmission to the frame. See Figure 55.

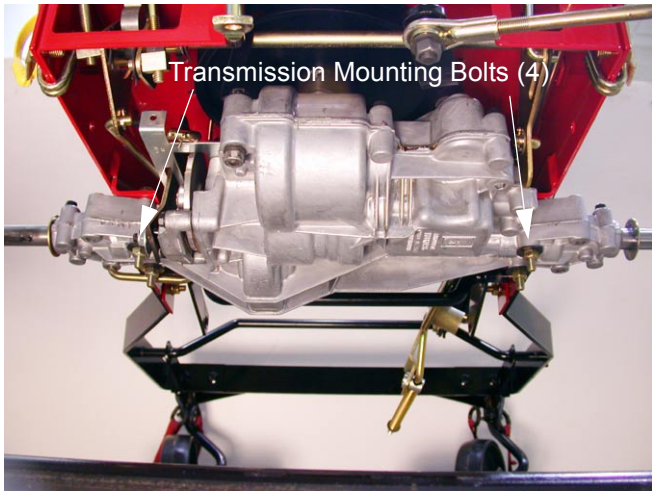

Figure 55

NOTE: Support the transmission during this procedure.

14.13. Remove the transmission from the unit for service. See Figure 56.

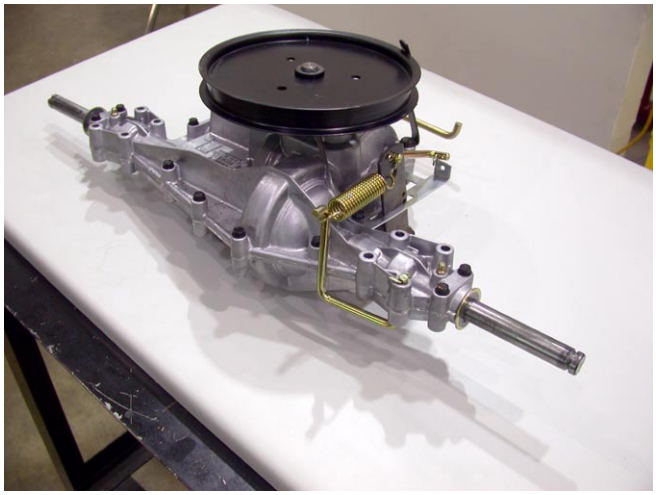

Figure 56

NOTE: Contact Tecumseh-Peerless for transmission service information during the warranty period. Model number information is located on the right side of the transmission. See Figure 57.

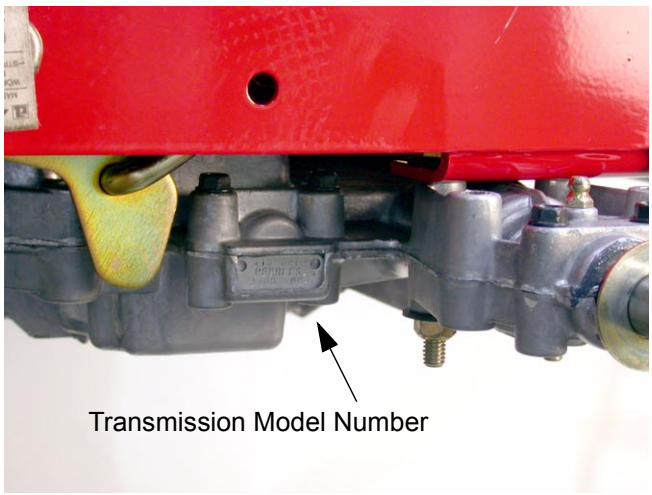

Figure 57

15. INSTALLATION OF WHEEL DRIVE BELT GUARDS - UPDATE

NOTE: Current production units have additional belt guards installed at the factory. This update will cover older units without pulley belt guards.

On older units the long run of the wheel drive belt creates several issues.

- The belt may come off one of the pulleys.
- The belt may not fully disengage from the engine pulley, causing engine creep or hard shifting

A kit is available to correct these situations.

KIT NUMBER: 753-04509

Contents: (3) belt guides

- Belt Guide - 1760096
- Belt Guide - 1769522
- Belt Support Bracket - 1768381001

Installation procedures are as follows:

15.1. Using a ½ inch socket, remove the four flange screws securing the Belt Guard cover to the mower support frame. See Figure 58.

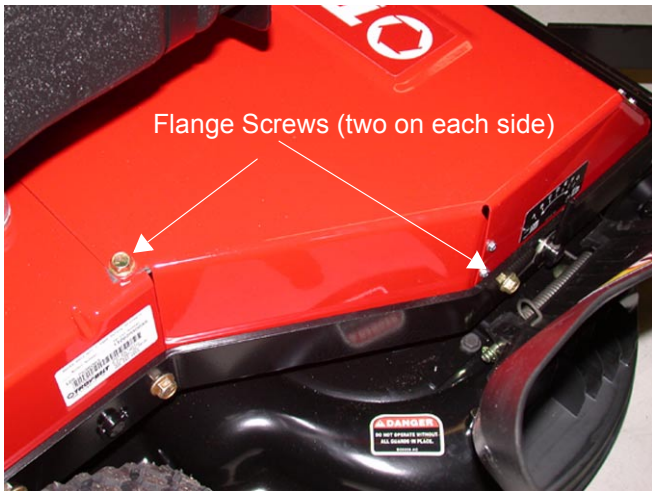

Figure 58

15.2. Using a 9/16 inch socket remove the lock nut securing the idler pulley to the idler arm. See Figure 59.

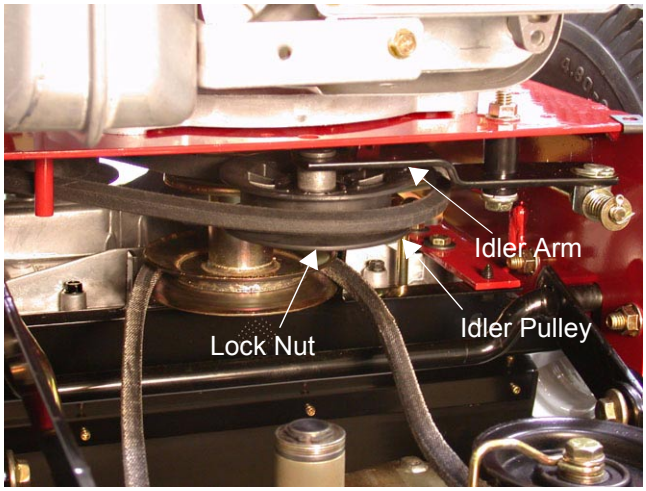

Figure 59

15.3. Reinstall the idler pulley onto the carriage bolt followed by the original flat washer, the new belt guide (1760096) and secure it with the original lock nut. See Figure 60.

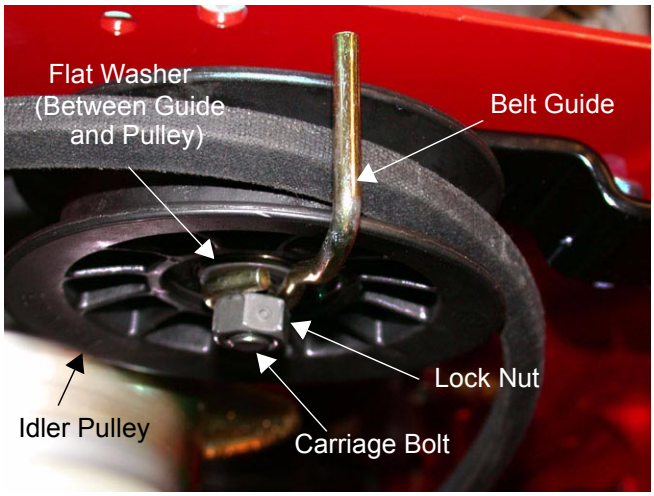

Figure 60

NOTE: Face the belt guide towards the front of the unit. The flat washer must go between the Guide and the pulley in order to provide clearance for the guide.

15.4. Reinstall the belt guard cover.

15.5. Using a ½ inch socket and extension, remove the two flange screws that secure the flap bracket to the frame. Remove the flap bracket and set it aside. See Figure 61.

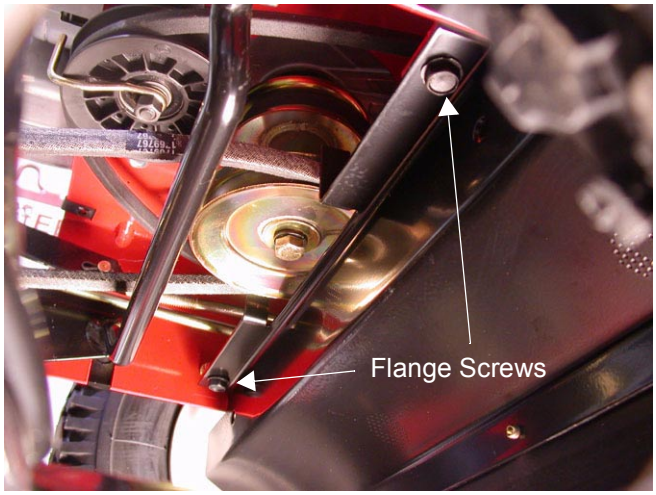

Figure 61

15.6. Using a 9/16 inch socket and extension, remove the left rear engine mounting hex cap screw. See Figure 62.

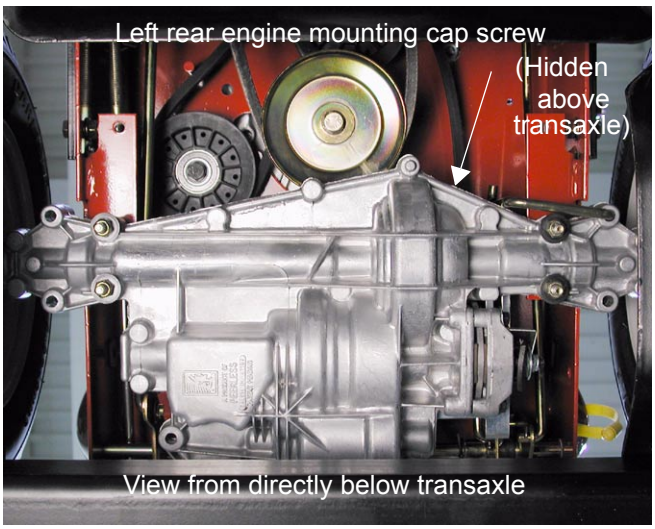

Figure 62

15.7. Place the belt guide (1769522) in a vise and using a cold chisel, open the eyelet until the hex cap screws can pass through the opening. See Figure 63.

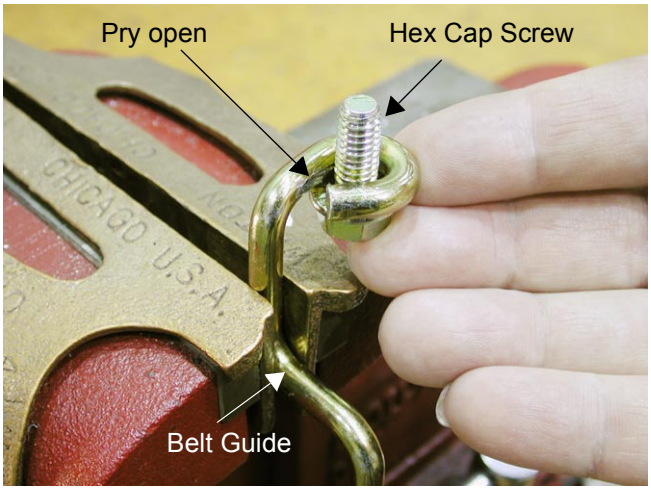

Figure 63

15.8. Reinstall the hex cap screw through the frame and into the engine. See Figure 64.

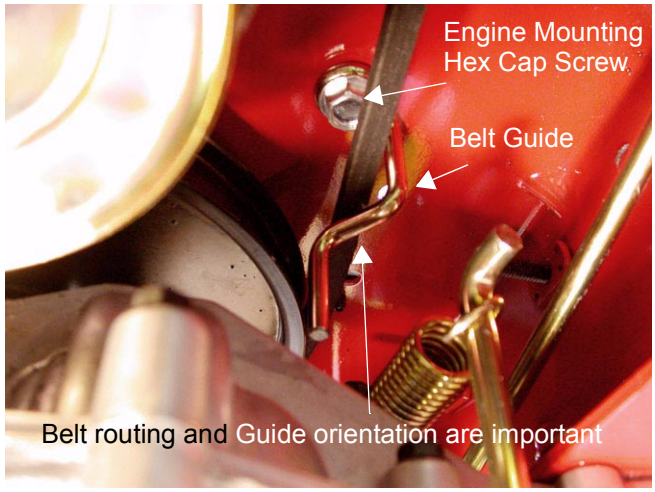

Figure 64

15.9. Align the belt guide so that the V belt is on the inside and on top of the guide.

NOTE: Make sure that the V belt does not drag on the guide when engaged and that the lower portion of the guide is at least 1/8 inch away from the pulley.

15.10. Use a vice to straighten the upper bend in the belt support bracket. (1768381001) See Figure 65.

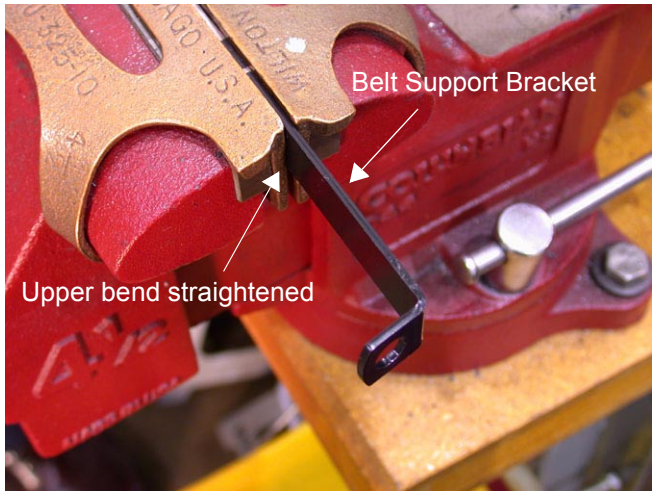

Figure 65

15.11. Using a 2 inch by ¼ - 20 bolt, lock washer, and hex nut (not supplied in kit) attach the belt support bracket to the top of the transaxle using the empty bolt hole at the left rear of the transaxle. See Figure 66.

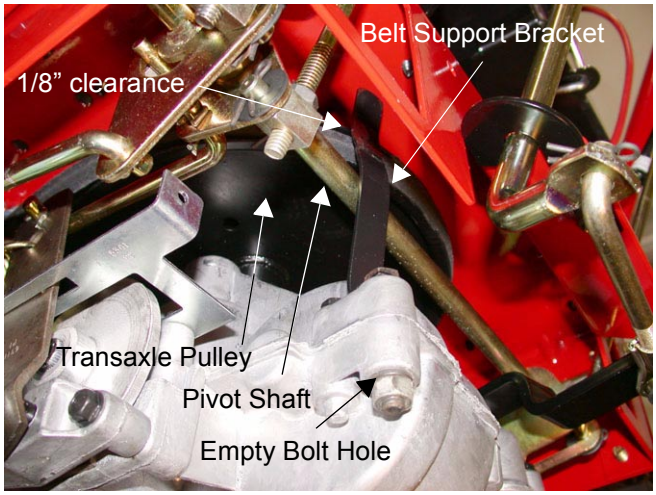

Figure 66

NOTE: The guide must be bent to clear the pivot shaft assembly while maintaining a distance of 1/8th inch of clearance from the transaxle pulley.

16. ENGINE PULLEY BELT GUIDE KIT

NOTE: Some older units have a flap bracket that uses removable engine pulley belt guides. Updated belt guides have been manufactured as a kit. Part Number 1770557. If your unit uses the older style guides, obtain the update kit. The kit contains all installation directions. See Figure 67.

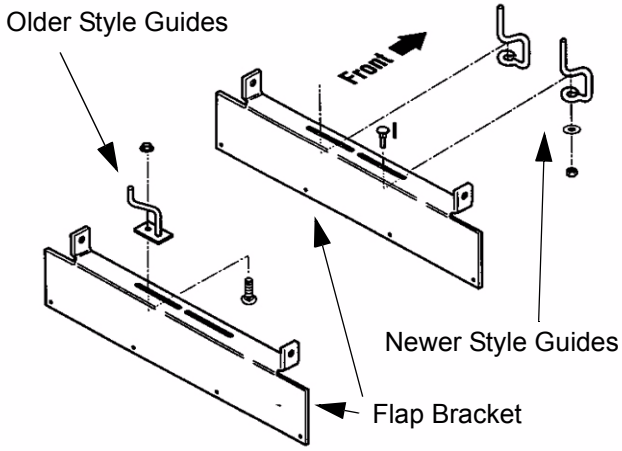

Figure 67

NOTE: The latest production of these units uses a newer flap bracket that integrates the belt guides into the metal stamping. This newer flap bracket will NOT fit on older units.

Servicing the Troy-Bilt Wide Cut 33” Combination Mower